

L Number	Hits	Search Text	DB	Time stamp
1	548	cement adj plant	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2004/02/09 13:13
2	72	(cement adj plant) and (sludge or (coal adj ash) or (spent adj catalyst))	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2004/02/09 13:20
3	3	(cement adj plant) and ((drain adj sludge) or (spent adj catalyst))	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2004/02/09 13:21

L Number	Hits	Search Text	DB	Time stamp
1	1	(catalyst adj waste) and (drain adj sludge) and slag and dust and (steelmaking or (steel adj making))	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2004/02/09 10:28
2	92572	((catalyst adj waste) or (drain adj sludge) or slag or dust) and (steelmaking or (steel adj making) or steel)	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2004/02/09 10:29
3	2306	((((catalyst adj waste) or (drain adj sludge) or slag or dust) and (steelmaking or (steel adj making) or steel)) and cement and oil	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2004/02/09 10:29
4	136	(((((catalyst adj waste) or (drain adj sludge) or slag or dust) and (steelmaking or (steel adj making) or steel))) and cement and oil) and refining and power	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2004/02/09 10:29

L Number	Hits	Search Text	DB	Time stamp
1	1	eco adj industrial adj park	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2004/02/09 12:44
2	1	eco adj industrial	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2004/02/09 12:44
3	0	ecoindustrial	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2004/02/09 12:44
4	982	industrial adj park	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2004/02/09 12:45
5	2	(industrial adj park) and steel and cement and power and oil	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2004/02/09 12:46
6	4	(industrial adj park) and steel and cement and power	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2004/02/09 12:46
7	13	(industrial adj park) and steel and cement	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2004/02/09 12:46
8	33	(industrial adj (park or complex)).ti.	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2004/02/09 12:47

Access DB# 113882**SEARCH REQUEST FORM**

Scientific and Technical Information Center

Requester's Full Name: Scott Knistler Examiner #: 60485 Date: 2/9/04
Art Unit: 1702 Phone Number 30 _____ Serial Number: 61978021
Mail Box and Bldg/Room Location: REML 603 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

STAFF USE ONLY

Searcher: Mike Newell
Searcher Phone #: 571-272-2538
Searcher Location: Rem 4A30
Date Searcher Picked Up: 2/11/04
Date Completed: 2/12/04
Searcher Prep & Review Time: 70
Clerical Prep Time: _____
Online Time: 80

Type of Search

NA Sequence (#) _____
AA Sequence (#) _____
Structure (#) _____
Bibliographic ☒
Litigation _____
Fulltext _____
Patent Family _____
Other _____

Vendors and cost where applicable

STN _____
Dialog 354.45
Questel/Orbit _____
Dr.Link _____
Lexis/Nexis _____
Sequence Systems _____
WWW/Internet _____
Other (specify) _____



STIC Search Report

EIC 1700

STIC Database Tracking Number 113882

TO: Scott R Kastler
Location: REM 6C03
Art Unit : 1742
February 12, 2004

Case Serial Number: 09/978021

From: Michael Newell
Location: EIC 1700
REMSEN 4A30
Phone: 571/272-2538
MNewell@uspto.gov

Search Notes



STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

➤ I am an examiner in Workgroup: Example: 1713

➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28



Mellerson, Kendra

From: Unknown@Unknown.com
Sent: Monday, February 09, 2004 11:18 AM
To: STIC-EIC1700
Subject: Generic form response

ResponseHeader=Commercial Database Search Request

AccessDB#= _____

LogNumber= _____

Searcher= _____

SearcherPhone= _____

SearcherBranch= _____

MyDate=Mon Feb 09 11:17:23 GMT-0500 (Eastern Standard Time) 2004

submitto=STIC-EIC1700@uspto.gov

Name=Scott Kastler

Empno=60485

Phone=(571) 272-1243

Artunit=1742

Office=Rem 6c03

Serialnum=09/978,021

PatClass=

Earliest=01/06/2000

Format1=paper

Format3=email

Searchtopic=a basic industrial complex including each of an oil refining plant, an oil fired power plant, a cement plant and a steel making plant where at least three of catalyst waste, drain sludge, slag and dust are transferred from the steelmaking plant, power plant or oil refining plant to the cement plant.

Comments=from 9:30 am to 3 pm mon, tues, thurs or fri.

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File 350:Derwent WPIX 1963-2004/UD,UM &UP=200410

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File 347:JAPIO Oct 1976-2003/Oct(Updated 040202)

(c) 2004 JPO & JAPIO

File 353:Ei EnCompassPat(TM) 1964-200405

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File 354:Ei EnCompassLit(TM) 1965-2004/Feb W1

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File 2:INSPEC 1969-2004/Feb W1

(c) 2004 Institution of Electrical Engineers

File 6:NTIS 1964-2004/Feb W2

(c) 2004 NTIS, Intl Cpyrght All Rights Res

File 8:Ei Compendex(R) 1970-2004/Feb W1

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File 94:JICST-EPlus 1985-2004/Feb W1

(c)2004 Japan Science and Tech Corp(JST)

File 95:TEME-Technology & Management 1989-2004/Jan W4

(c) 2004 FIZ TECHNIK

File 99:Wilson Appl. Sci & Tech Abs 1983-2004/Jan

(c) 2004 The HW Wilson Co.

File 103:Energy SciTec 1974-2004/Feb B1

(c) 2004 Contains copyrighted material

File 118:ICONDA-Intl Construction 1976-2004/Feb

(c) 2004 Fraunhofer-IRB

File 144:Pascal 1973-2004/Feb W1

(c) 2004 INIST/CNRS

File 241:Elec. Power DB 1972-1999Jan

(c) 1999 Electric Power Research Inst.Inc

File 315:ChemEng & Biotec Abs 1970-2004/Jan

(c) 2004 DECHEMA

File 110:WasteInfo 1974-2002/Jul

(c) 2002 AEA Techn Env.

? ds

Set	Items	Description
S1	3067905	INDUSTRY OR INDUSTRIAL OR MULTI(W)INDUSTR?
S2	13742301	PLANT OR PLANTS OR FACTORY OR FACTORIES OR FACILITY OR FACILITIES OR MANUFACTUR? OR MFR# OR PRODUC? OR PROD#
S3	23030605	INTEGRAT? OR UNIFY OR UNIFIED OR INTERDEPENDENT OR MULTIPL-E? OR COMBIN? OR SYSTEM? OR COMPLEX? OR CONNECT?
S4	41578	S1(4N)S2(4N)S3
S5	4066	S4/TI
S6	787	(PETROL? OR OIL?) AND (POWER?) AND (CONCRETE? OR CEMENT? OR GYPSUM? OR PORTLAND) AND (IRON OR STEEL OR STEELMAKING)
S7	6	S6 AND S5
S8	19	S6 AND S4
S9	19	S7 OR S8

S10 2542273 POWER?(3A) (ELECTRIC? OR OIL? OR COAL? OR OIL(W) FIRED OR CO-
AL(W) FIRED)
S11 1115817 POWER?(3N) (ELECTRIC? OR OIL? OR COAL? OR OIL(W) FIRED OR CO-
AL(W) FIRED)
S12 708179 (OIL? OR PETROL?) (3N) (REFINE OR REFINING OR REFINER?)
S13 1323936 CEMENT? OR CONCRETE? OR GYPSUM? OR DUST OR SLAG
S14 2549487 IRON? OR STEEL?
S15 34 S11(S) S12(S) S13(S) S14
S16 31 S15 NOT S9
S17 168 S11 AND S12 AND S13 AND S14
S18 66 S17 AND S3
S19 45 S18 NOT (S15 OR S9)
S20 138 S13 AND S5
S21 36 S20 AND (WASTE? OR RECYCL? OR RECLAIM? OR REGENERAT?)
S22 34 S21 NOT (S16 OR S9 OR S19)
S23 129 S9 OR S15 OR S18 OR S21
S24 118 REMOVE DUPLICATES S23 (unique items)
? t s24/6/1-118

24/6/1 (Item 1 from file: 350)
015294327 **Image available**
WPI Acc No: 2003-355261/200334
Title Terms: OIL; SAND; SPIRAL; SURFACE; MINE; APPARATUS; EXCHANGE; RENEW;
ELECTRIC; HYDROGEN; FUEL; PRODUCE; OIL; COMPRISE; RIVER; CURRENT;
INTENSIFY; ELECTROMAGNET; PROPELLER; ARRAY; MODULE

24/6/2 (Item 2 from file: 350)
015029492
WPI Acc No: 2003-090009/200308
Title Terms: SULPHITE; TREAT; METHOD; INDUSTRIAL; WASTE; COMBINATION;
INDUSTRIAL; WASTE; CALCIUM; SULPHITE; PRODUCE; INSOLUBLE; METAL; SULPHUR;
OXIDE; COMPLEX; CONVERT; SULPHITE; SULPHATE

24/6/3 (Item 3 from file: 350)
015002193 **Image available**
WPI Acc No: 2003-062708/200306
Title Terms: PRICE; INDEX; INFORMATION; MANAGEMENT; SYSTEM; INDUSTRIAL;
PRODUCT; PETROL; PERFORMANCE; STATISTICAL; PROCESS; RECEIVE; PRICE;
INFORMATION; DISPLAY; PROCESS; PRICE; DATA; NETWORK

24/6/4 (Item 4 from file: 350)
014969628 **Image available**
WPI Acc No: 2003-030142/200302
Title Terms: GASIFICATION; SLUG; COMBUST; SYSTEM; TREAT; INDUSTRIAL; WASTE;
COMBUST; PRODUCE; COMBUST; GAS; MELT; ASH; CONTENT; COMBUST; GAS;

GASIFICATION; FURNACE; WASTE; HEAT; BOILER

24/6/5 (Item 5 from file: 350)
014918945 **Image available**
WPI Acc No: 2002-739652/200280
Title Terms: REDUCE; EMIT; INDUSTRIAL; COMBUST; FACILITY; REACT; EMIT; FORM
; CARBONATE; CONTAIN; FERTILISER; APPLY; FERTILISER; SOIL; PLANT

24/6/6 (Item 6 from file: 350)
014785650
WPI Acc No: 2002-606356/200265
Title Terms: VULCANISATION; INDUSTRIAL; RUBBER; PRODUCT; MIX; CONSIST;
MULTIPLE; RUBBER; TYPE; PLASTICISED; SULPHUR; ADMIXED

24/6/7 (Item 7 from file: 350)
014235211 **Image available**
WPI Acc No: 2002-055909/200208
Title Terms: INTEGRAL; UTILISE; INDUSTRIAL; REFUSE; CONSIST; COMBINATION;
MINI; FACTORY; RESIDUE; VOLUME; FACTORY; PROCESS

24/6/8 (Item 8 from file: 350)
013674621 **Image available**
WPI Acc No: 2001-158833/200116
Title Terms: HEAT; SENSITIVE; WARNING; DEVICE; DETECT; TEMPERATURE;
INCREASE; ELECTRIC; INSULATE; OPERATE; MECHANISM; COMPRISE; HOUSING;
SPOOL; INDICATE; THERMOSENSITIVE; END; PLUG; EJECT

24/6/9 (Item 9 from file: 350)
012314458 **Image available**
WPI Acc No: 1999-120564/199910
Title Terms: INDUSTRIAL; COMPLEX; POWER; STATION; CEMENT; PLANT; STEEL;
PLANT; LINK; ALLOW; ENERGY; REDUCE; WASTE

24/6/10 (Item 10 from file: 350)
010238261
WPI Acc No: 1995-139518/199518
Title Terms: AQUEOUS; POLYSILOXANE; POLY; SILICATE; BIND; PREPARATION;
COMBINATION; AMINE; OXY; SILANE; WATER; METAL; SILICATE; USEFUL; PROTECT;
COATING; CONCRETE; STEEL

24/6/11 (Item 1 from file: 347)

05886313 **Image available**
COMPOSITE POWER GENERATING PLANT

24/6/12 (Item 2 from file: 347)
05580050 **Image available**
INDUSTRIAL WASTE TREATMENT SYSTEM UTILIZING COMBUSTIBLE GAS PRODUCED BY
THERMAL DECOMPOSITION

24/6/13 (Item 1 from file: 353)
0372646
In situ treatment of hydrocarbon containing formation e.g. kerogen,
involves controlled transfer of heat from heat sources to formation

24/6/14 (Item 2 from file: 353)
0369557
Melt reduction iron-smelting dimethyl ether production and power generation
combined production method and installation

24/6/15 (Item 3 from file: 353)
0366644
Oil sand spiral surface mining apparatus for exchange of renewable
electricity and hydrogen fuel for production of oil comprises river
current intensifier having electromagnetic propeller array modules

24/6/16 (Item 4 from file: 353)
0357532
Gasification and slugging combustion system for treating e.g. industrial
waste, has combustor to produce combustion gas and melt ash content
using combustible gas from gasification furnace, and waste heat boiler

24/6/17 (Item 5 from file: 353)
0356533
Reduction of emissions, from industrial combustion facilities, involves
reacting emissions to form carbonate-containing fertilizer, and
applying at least some fertilizer to soil and plants

24/6/18 (Item 6 from file: 353)
0352092
Production of aliphatic hydrocarbons and urea comprises forming syngas and
carbon dioxide from carbonaceous material and producing aliphatic
hydrocarbons from syngas and urea from carbon dioxide

24/6/19 (Item 7 from file: 353)
0349035

In situ treatment of hydrocarbon containing formation, e.g. coal formation, involves controlled heating of selected section of formation at specified temperature

24/6/20 (Item 8 from file: 353)
0347126

Treating hydrocarbon containing formation in situ for e.g. hydrocarbon production, involves controllably heating selected formation section at specified average temperature

24/6/21 (Item 9 from file: 353)
0341269

Continuous synthesis of ferrate used as oxidant, flocculent, coagulant involves mixing iron salt and oxidizing agent in mixing chamber, delivering portions of mixed solution to reaction chamber

24/6/22 (Item 10 from file: 353)
0340783

Directly reduced iron pellets production involves firing a pelletized mixture of iron oxide-containing material, internal reducing agent and a novel binder including a non-combustible fibrous material

24/6/23 (Item 11 from file: 353)
0336125

In situ treatment of hydrocarbon formation, for production of hydrocarbons, hydrogen and/or other products, involves heating selected part of formation with controlled heat to produce mixture from formation

24/6/24 (Item 12 from file: 353)
0325467

Complex production of rotary film electromagnetic separator for tunnel double body native-style blast furnace and tunnel spiral flow magnetic blast furnace

24/6/25 (Item 13 from file: 353)
0315825

Non-metallic electrically conductive exothermic coating for heating floors, walls comprises binder, volatile solvent and electrically conductive

flake carbon black and graphite of predefined particle size

24/6/26 (Item 14 from file: 353)
0291919

Industrial complex with power station, cement plant and steel-making -
where the plants are linked to allow better use of energy and reduction
of waste

24/6/27 (Item 15 from file: 353)
0277184

Cracking converter changing high calorific value waste e.g. plastics, fat
and vegetable oil to heating fuel and diesel oil - employs virtually
worthless wastes, e.g. blast furnace slag and spent air purification
material, as catalysts for liquid- and vapour-phase conversion at
comparatively low temperatures

24/6/28 (Item 16 from file: 353)
0264664

Fire retardant foam material for coatings, joints etc. - contg.
stone-forming component and hardener component and-or gas-releasing
component and-or pH-adjusting component

24/6/29 (Item 17 from file: 353)
0262176

Integrated oxygen-based iron-making process - involves partially oxidising
carbonaceous feed and heating iron oxide with reducing gas, yielding
reduced solid metallic iron and providing compressing and heating air
stream

24/6/30 (Item 18 from file: 353)
0246449

Aq. polysiloxane-polysilicate binders prepn. - by combining an amine
oxysilane with water and a metal silicate and are esp. useful in
protective coatings for, e.g., concrete and steel.

24/6/31 (Item 19 from file: 353)
0218530

Using municipal wastes to provide energy and resource conservation - by
high-temp. thermochemical conversion with particulate carbon fuel using
oxygen and steam producing marketable prods

24/6/32 (Item 20 from file: 353)
0198494

Desulphurising of gas by adsorption material at 300 to 650 deg. C - and 15 to 85 bar pressure after washing to remove dust gives good energy output

24/6/33 (Item 21 from file: 353)
0182795

PREVENTING HARMFUL EMISSION ESP. OF NITROGEN AND SULPHUR OXIDE CPDS. - FROM COAL FIRED POWER STATION OR HEATING PLANT USING COAL MIXT. CONTG. ADDITIVES

24/6/34 (Item 1 from file: 354)
728619

"MIX" concept links refining operations with power and construction industries

24/6/35 (Item 2 from file: 354)
682087

Boiler works resistant to corrosion

Original Title: De la chaudronnerie resistente a la corrosion

24/6/36 (Item 3 from file: 354)
648995

Rational energy use

Original Title: Rationelle energieverwendung

24/6/37 (Item 4 from file: 354)
645103

Energy analysis of a CO(sub)2 recycling system

24/6/38 (Item 5 from file: 354)
0581647

Nelson-Farrar quarterly costimating/Indexes for selected equipment show moderate increase

24/6/39 (Item 6 from file: 354)
0562512

Nelson-Farrar ((N-F)) quarterly costimating/How indexes have risen

- 24/6/40 (Item 7 from file: 354)
0487260
(As part of) the development of durable sorbents for the GE moving-bed
hot-gas (coal gas) desulfurization process
- 24/6/41 (Item 8 from file: 354)
0436608
Nelson-Farrar quarterly costimating/How indexes have risen
- 24/6/42 (Item 9 from file: 354)
0369991
CORROSION CONTROL IN FLUE GAS DISCHARGE SYSTEMS
Original Title: PREVENZIONE DELLA CORROSIONE NEI SISTEMI DI SCARICO DEI
FUMI.
- 24/6/43 (Item 10 from file: 354)
0333244
A NUCLEAR HEAT SOURCE DESIGN (CONCEPT) FOR AN ADVANCED HTGR
((HIGH-TEMPERATURE GAS-COOLED REACTOR)) PROCESS HEAT PLANT
- 24/6/44 (Item 11 from file: 354)
0290885
A REVIEW OF CORROSION-RELATED FAILURES IN FLUE GAS DESULFURIZATION SYSTEMS
- 24/6/45 (Item 12 from file: 354)
0287945
(LIQUID NATURAL) GAS-FIRED COASTAL BULK CARRIERS
- 24/6/46 (Item 13 from file: 354)
0267345
THE USE OF QUANTITY AND MAN-HOUR RATIOS FOR IMPROVED COST ESTIMATING
Original Title: VERBESSERTE KOSTENSCHATZUNGEN DURCH ANWENDUNG VON MENGEN-
UND MANNSTUNDEN-VERHALTNISZAHLEN.
- 24/6/47 (Item 14 from file: 354)
0259906
TECHNOLOGICAL SYSTEM FOR WASTE-FREE PROCESSING OF THE THERMAL ELECTRIC
POWER PLANT ASH
- 24/6/48 (Item 15 from file: 354)

0171863
OFFSHORE METHANOL

24/6/49 (Item 1 from file: 2)
02722126 INSPEC Abstract Number: B86056574
Title: From concept to implementation of a district heating system using waste heat from an industrial plant
Publication Date: 24 May 1986

24/6/50 (Item 2 from file: 2)
01372975 INSPEC Abstract Number: B79033355
Title: Industrial cogeneration: problems and promise
Publication Date: Feb. 1979

24/6/51 (Item 3 from file: 2)
01360226 INSPEC Abstract Number: B79029518
Title: A technical analysis for cogeneration systems with potential applications in twelve California industrial plants
Publication Date: 1978

24/6/52 (Item 1 from file: 6)
2014442 NTIS Accession Number: PB97-181556
Impact of High Energy Price Scenarios on Energy-Intensive Sectors: Perspectives from Industry Workshops
Jul 97

24/6/53 (Item 2 from file: 6)
1974454 NTIS Accession Number: MIC-96-05527
Technology policy and practice in Africa
c1995

24/6/54 (Item 3 from file: 6)
1955948 NTIS Accession Number: DE96739489
1994 nendo energy jukyu jisseki to tanki tenbo. Energy jukyu doko chosa iinkai hokoku. (Fiscal 1994 results of energy supply and demand and its short-time prospect. Report of the energy supply and demand outlook investigation committee)
Aug 95

24/6/55 (Item 4 from file: 6)
1798001 NTIS Accession Number: PB94-150273

Fuji Electric Journal, Vol. 66, No. 9, 1993
c1993

24/6/56 (Item 5 from file: 6)
1736752 NTIS Accession Number: DE93781440
Chikyu kankyo wo koryoshita nisanka tanso no yuko riyo gijutsu ni kansuru
chosa. 2. (Study on technology for effective utilization of carbon dioxide
in view of global environment)
Mar 92

24/6/57 (Item 6 from file: 6)
1647233 NTIS Accession Number: DE92769375
Chikyu kankyo sangyo gijutsu suishin jigyo. CO(sub 2) mondai no taisaku
gijutsu ni kansuru hyoka shuho no chosa. (Promotion of industrial
technologies on the global environment. Study on an evaluation method of
CO(sub 2) emission control technologies)
Mar 91

24/6/58 (Item 7 from file: 6)
1466990 NTIS Accession Number: TIB/B89-81848
Anfall und Entsorgung von Reststoffen aus der Rauchgasreinigung in
Baden-Wuerttemberg. T. 1. Grossanlagen. (Removal of by-products from flue
gas desulfurization systems. Pt. 1. Industrial furnaces)
May 88

24/6/59 (Item 8 from file: 6)
1093797 NTIS Accession Number: DOE/TIC-10593
Energy Impact Studies of Air and Water Pollution Control Requirements on
Industry Groups. Phase I: Summary of Major Current and Completed Studies.
Appendix B
Sep 76

24/6/60 (Item 9 from file: 6)
1093688 NTIS Accession Number: DOE/TIC-10403
Identification of Alternative Fuels for Industrial Major Fuel Burning
Installation
Nov 76

24/6/61 (Item 10 from file: 6)
0992871 NTIS Accession Number: DE82014242
Direct Industrial Utilization of Coal
Sep 81

- 24/6/62 (Item 11 from file: 6)
0905501 NTIS Accession Number: EPRI-EA-1821-SY/XAB
Potential for Load Management in Selected Industries. Summary Report
Apr 81
- 24/6/63 (Item 12 from file: 6)
0874123 NTIS Accession Number: EPRI-EA-1573/XAB
Industrial Response to Time-of-Day Pricing: A Technical and Economic
Assessment of Specific Load-Management Strategies. Final Report
Oct 80
- 24/6/64 (Item 13 from file: 6)
0846667 NTIS Accession Number: DOE/CS/40255-1/XAB
Potential Industrial Applications for Fluidized-Bed Waste Heat Recovery
Systems
Dec 79
- 24/6/65 (Item 14 from file: 6)
0831095 NTIS Accession Number: DOE/ET/12434-T1/XAB
Multi-Megawatt Organic Rankine Engine Power Plant (MORE). Phase IA Final
Report: System Design of MORE Power Plant for Industrial Energy
Conservation Emphasizing the Cement Industry
31 Jan 80
- 24/6/66 (Item 15 from file: 6)
0738391 NTIS Accession Number: MTR-7485(APP.) (V.1)/XAB
Systems Descriptions and Engineering Costs for Solar-Related
Technologies. Appendix to Volume I. Experience Curves and Cost Trends: A
Preliminary Consideration of Some Factors Likely to Influence Capital Costs
in Selected Solar Energy Systems
Jun 77
- 24/6/67 (Item 16 from file: 6)
0725990 NTIS Accession Number: PB-285 589/8/XAB
Proposed Issuance of a New Source National Pollutant Discharge
Elimination System Permit to Ideal Basic Industries, Inc. Cement Plant,
Theodore Industrial Park, Alabama, and Limestone Quarry, Monroe County,
Alabama
(Final environmental impact statement)
Sep 78

- 24/6/68 (Item 17 from file: 6)
0700640 NTIS Accession Number: PB-279 960/9/XAB
Outlook for Computer Process Control--Manpower Implications in Process Industries
(Final rept)
1970
- 24/6/69 (Item 18 from file: 6)
0537842 NTIS Accession Number: PB-248 496/2/XAB
Project Independence Blueprint. Task Force Report. Availabilities, Requirements, and Constraints on Materials, Equipment, and Construction
(Final rept)
Nov 74
- 24/6/70 (Item 19 from file: 6)
0293494 NTIS Accession Number: PB-203 522/XAB
Particulate Pollutant System Study. Volume III. Handbook of Emission Properties
1 May 71
- 24/6/71 (Item 20 from file: 6)
0293493 NTIS Accession Number: PB-203 521/XAB
Particulate Pollutant System Study. Volume II. Fine Particle Emissions
1 Aug 71
- 24/6/72 (Item 21 from file: 6)
0291570 NTIS Accession Number: PB-203 128/XAB
Particulate Pollutant System Study. Volume I - Mass Emissions
1 May 71
- 24/6/73 (Item 1 from file: 8)
04914716
Title: Evaluation of detoxification process for treating biosolids from an integrated industrial wastewater treatment plant
Conference Title: Proceedings of the 1997 13th International Conference on Solid Waste Technology and Management. Part 1 (of 2)
Publication Year: 1997
- 24/6/74 (Item 2 from file: 8)
01907614
Title: ENERGY AND THE STEEL INDUSTRY. INTRODUCTION TO THE REPORT ON

INTEGRATED STEEL PLANTS.

Conference Title: Steel and Energy: Proceedings of Seminar.

Publication Year: 1983

24/6/75 (Item 3 from file: 8)

00674136

Title: ENERGY USE AND AIR POLLUTION CONTROL IN NEW PROCESS TECHNOLOGY.

Publication Year: 1977

24/6/76 (Item 4 from file: 8)

00629455

Title: Exploratory Processing of Integrated Steel Plant Wastes Using the Rotary Kiln Method in an Industrial Plant.

Title: VERSUCHE ZUER VERARBEITUNG VON HUETTENWERKSABFAELLEN NACH DEM WAEELZVERFAHREN IN EINER BETRIEBSANLAGE.

Publication Year: 1976

24/6/77 (Item 1 from file: 94)

05343971 JICST ACCESSION NUMBER: 03A0057505 FILE SEGMENT: JICST-E

Rapid prototyping technology 4. Application examples 4.1. Application to medical field 4.1.2. Development of prosthetic limb socket manufacturing system. (Optoelectronic Industry and Technology Development Association S) ., 2002

24/6/78 (Item 2 from file: 94)

05126639 JICST ACCESSION NUMBER: 02A0251191 FILE SEGMENT: JICST-E

Project for assisting technology development and popularization promotion of robots. Research report on robot system development in small-to-medium scale production systems. Fiscal year 2000. (Japan robot industry association S) ., 2001

24/6/79 (Item 3 from file: 94)

04904502 JICST ACCESSION NUMBER: 01A0661799 FILE SEGMENT: JICST-E

Report of integrated resources utilization project. Efficient land reclamation system using waste and industry by-product. The fiscal year of 2000. (Clean Japan Center. S) ., 2001

24/6/80 (Item 4 from file: 94)

03889051 JICST ACCESSION NUMBER: 98A0917630 FILE SEGMENT: JICST-E

Post DCS : What comes next to DCS. Study the real image of post DCS ., 1998

- 24/6/81 (Item 5 from file: 94)
02776425 JICST ACCESSION NUMBER: 96A0361965 FILE SEGMENT: JICST-E
On integrated industrial waste disposing facility. , 1996
- 24/6/82 (Item 6 from file: 94)
02565873 JICST ACCESSION NUMBER: 95A0650613 FILE SEGMENT: JICST-E
High Efficiency Utilization of Thermal Energy and Hot Gas Cleaning., 1995
- 24/6/83 (Item 7 from file: 94)
02027876 JICST ACCESSION NUMBER: 94A0274563 FILE SEGMENT: JICST-E
Study on global warming problem for the purpose of global environmental
conservation.(Sponsor : Japan Industrial Policy Res. Inst.)., 1993
- 24/6/84 (Item 8 from file: 94)
01942379 JICST ACCESSION NUMBER: 93A0846938 FILE SEGMENT: JICST-E
Deodorization countermeasures of a chemical plant such as rubber industry.
Recent advance in the system of 3 companies., 1993
- 24/6/85 (Item 9 from file: 94)
01920510 JICST ACCESSION NUMBER: 93A0994153 FILE SEGMENT: JICST-E
An Outlook on Recent Industrial Systems Technology., 1993
- 24/6/86 (Item 10 from file: 94)
01695968 JICST ACCESSION NUMBER: 93A0018751 FILE SEGMENT: JICST-E
Trends in capital investment of main industries in 1992.(Sponsor :
Ministry of International Trade and Industry, Industrial Policy Bureau
)., 1992
- 24/6/87 (Item 1 from file: 95)
01317353 M99060491614
Wirkungsgradsteigernde Massnahmen durch integrierte Abwaermenutzung bei
feststoffbefeuernden Industrie-Dampferzeugern und bei Abhitzekesseln. Teil
2: Kombi-Prozess
(Enhancing efficiency through integrated waste heat utilisation in
solid-fuel industrial steam generators and heat recovery boilers. Part 2:
Combined-cycle process)1999
- 24/6/88 (Item 2 from file: 95)
00780858 T94040146153
Untersuchungen zur Verwertung von Textilabfaellen zur Herstellung von
Faser-Bindemittel-Kombinationswerkstoffen

(Investigations into recycling of textile waste for the manufacture of fibre/binder combination industrial materials)1994

24/6/89 (Item 1 from file: 103)

04897627 NEDO

Title: FY 1999 report on the results of the contract project 'The model project for facilities for effective utilization of industrial waste at the industrial complex in Thailand.' Separate Volume 6 - FY 1999 project; 1999 nendo seika hokokusho. Tai ni okeru kogyo danchi sangyo haikibutsu yuko riyo setsubi moderu jigyo - 6

Publication Date: 20010301

Availability Date: 20030217

24/6/90 (Item 2 from file: 103)

04897626 NEDO

Title: FY 1999 report on the results of the contract project 'The model project for facilities for effective utilization of industrial waste at the industrial complex in Thailand.' Separate Volume 5 - FY 1999 project; 1999 nendo seika hokokusho. Tai ni okeru kogyo danchi sangyo haikibutsu yuko riyo setsubi moderu jigyo - 5

Publication Date: 20010301

Availability Date: 20030217

24/6/91 (Item 3 from file: 103)

04897625 NEDO

Title: FY 1999 report on the results of the contract project 'The model project for facilities for effective utilization of industrial waste at the industrial complex in Thailand.' Separate Volume 4 - FY 1999 project; 1999 nendo seika hokokusho. Tai ni okeru kogyo danchi sangyo haikibutsu yuko riyo setsubi moderu jigyo - 4

Publication Date: 20010301

Availability Date: 20030217

24/6/92 (Item 4 from file: 103)

04807546 NEDO

Title: Fiscal 1999 technical survey report. Basic survey of prioritized fields in South Asia (Bangladesh); 1999 nendo Minami Asia chiiki (Bangladesh) energy tashohi sangyo kiso chosa jigyo hokokusho

Publication Date: 20000301

Availability Date: 20020603

24/6/93 (Item 5 from file: 103)

04782866 RN02019555; TVI 0001; TRN JN9940356; NEDO

Title: Basic survey for promoting energy efficiency in developing countries. Database development project directory of energy conservation technology in Japan

Publication Date: 19990201

Availability Date: 20020411

24/6/94 (Item 6 from file: 103)

04737297 EDB-01-088051; TVI 0109; TRN 000900638; CLG-00090638; CLA

Title: Reuse of CO₂ in the cement industry. A production-integrated environmental protection

Conference title: 5. international conference on greenhouse gas control technologies: GHGT-5

Publication Date: 20010701

Availability Date: 20011227

24/6/95 (Item 7 from file: 103)

04615040 EDB-00-085447

Title: About natural gas

Publication Date: Jun 2000

24/6/96 (Item 8 from file: 103)

04292510 FRC-98-003594; EDB-98-052925

Title: Industrial kilns

Original Title: Fours industriels

Title: Energies. Cycles. Heating plants

Original Title: Energies. Cycles. Chaudieres

Series/Collection Title: Engineers Techniques

Original Series Title: Techniques de l'Ingenieur

Publication Date: Jan 1998

24/6/97 (Item 9 from file: 103)

04204591 ECN-97-0E1122; EDB-97-113295

Title: International comparisons of CO₂ emission reduction potentials

Publication Date: 1996

24/6/98 (Item 10 from file: 103)

04126035 NEDO-96-920550; EDB-97-034739

Title: Recycling system and ecological manufacturing for waste industrial products

Original Title: Haikogyo seihin recycle to eko manufacturing

Publication Date: 1 Jul 1996

24/6/99 (Item 11 from file: 103)
04070159 NEDO-96-913343; EDB-96-153919
Title: Coal gasification technology
Original Title: Sekitan gas ka gijutsu
Publication Date: 5 May 1996

24/6/100 (Item 12 from file: 103)
03980509 NEDO-95-914731; EDB-96-064269
Title: Industry-owned combined cycle power plants. Part 2. Feature and operation experience of 149MW low caloric gas fired combined cycle plant
Original Title: Jikahatsuyo konbaindo saikuru hatsuden. 2. Kawasaki Chiba Konbaindo Hatsudensho no gaiyo to unten jisseki
Publication Date: 15 Oct 1995

24/6/101 (Item 13 from file: 103)
03961449 NEDO-95-950354; EDB-96-045209
Title: Electric power deregulation and the wholesale power generation market
Original Title: Denryoku no kisei kanwa to oroshihatsuden shijo
Publication Date: 1 Oct 1995

24/6/102 (Item 14 from file: 103)
03477664 NEDO-92-820149; EDB-93-056540
Title: Study on technology for effective utilization of carbon dioxide in view of global environment
Original Title: Chikyu kankyo wo koryoshita nisanka tanso no yuko riyo gijutsu ni kansuru chosa. 2
Publication Date: Mar 1992

24/6/103 (Item 15 from file: 103)
03467506 NEDO-92-820145; EDB-93-046382
Title: Evaluation method of the CO2 measures technology in the field of industries
Original Title: Sangyo bun'ya ni okeru CO2 taisaku gijutsu ni kansuru hyoka shuho
Title: Proceedings of the second meeting of trend survey on the innovation technology for the earth.
Original Title: Dai 2 kai chikyu kankyo sangyo gijutsu doko chosa hokokukai. Chikyu kankyo sangyo gijutsu no seeds hakkutsu no tame ni shiryoshu
Publication Date: Oct 1992

24/6/104 (Item 16 from file: 103)
03444716 AIX-24-006321; EDB-93-023592
Title: Assessment of risks from hazards associated with industries and energy systems
Title: Methods for comparative risk assessment of different energy sources
Publication Date: Oct 1992

24/6/105 (Item 17 from file: 103)
03272639 NEDO-91-820215; EDB-92-035396
Title: Promotion of industrial technologies on the global environment.
Original Title: Chikyu kankyo sangyo gijutsu suishin jigyo. CO sub 2
mondai no taisaku gijutsu ni kansuru hyoka shuho no chosa
Publication Date: Mar 1991

24/6/106 (Item 18 from file: 103)
03231912 DE-91-010229; EDB-91-159348
Title: Flue gas purification and residue removal in power plants, industrial power generating systems and heating power plants.
Proceedings
Original Title: Rauchgasreinigung und Reststoffentsorgung in Kraftwerken, Industrie- und Heizkraftwerken. Vortraege
Conference title: VGB seminar on flue gas purification and residue removal in power plants, industrial power generating systems and heating power plants
Original Conference Title: VGV-Seminar 'Rauchgasreinigung und Reststoffentsorgung in Kraftwerken, Industrie- und Heizkraftwerken
Publication Date: 1990

24/6/107 (Item 19 from file: 103)
02830381 DE-90-002207; EDB-90-047607
Title: Results of measurements in a semi-industrial plant for combined low-temperature carbonisation and combustion
Original Title: Messtechnische Ergebnisse von der Technikumsanlage des Schwel-Brenn-Verfahrens
Publication Date: Aug 1989

24/6/108 (Item 20 from file: 103)
02767662 DE-89-012677; EDB-89-158704
Title: Process for flue gas conditioning in power plants, industrial furnaces, and all other types of combustion systems
Original Title: Verfahren zur Rauchgaskonditionierung bei Kraftwerken, Industriefeuerungen, Verbrennungs- und Brennanlagen aller Art
Publication Date: 12 Dec 1985

24/6/109 (Item 21 from file: 103)
02377973 DE-89-009509; EDB-89-123947
Title: Removal of by-products from flue gas desulfurization systems. Pt. 1.
Industrial furnaces
Original Title: Anfall und Entsorgung von Reststoffen aus der
Rauchgasreinigung in Baden-Wuerttemberg. T. 1. Grossanlagen
Series/Collection Title: Luft, Boden, Abfall
Publication Date: May 1988

24/6/110 (Item 22 from file: 103)
02274739 DE-89-000606; EDB-89-020473
Title: Space VAC systems in pharmaceutical plants
Title: Space HVAC systems in industrial plants - Munich meeting
Original Title: Heiz- und Raumlufttechnik in industriellen
Fertigungsstaetten - Tagung Muenchen
Conference title: Meeting on space HVAC systems in industrial plants
Publication Date: 1987

24/6/111 (Item 23 from file: 103)
01240587 EDB-83-140637
Title: Development of plants for industrial electric heat in connection
with the perspectives of the energy situation
Publication Date: Apr 1982

24/6/112 (Item 24 from file: 103)
01185047 EDB-83-085082
Title: Industrialization of the Arab countries
Publication Date: Feb 1983

24/6/113 (Item 25 from file: 103)
00510754 EDB-79-084854
Title: Energy impact studies of air and water pollution control
requirements on industry groups. Phase I: summary of major current
and completed studies. Appendix B
Publication Date: Sep 1976

24/6/114 (Item 26 from file: 103)
00462634 ERA-04-019389; EPA-05-001735; EDB-79-036733
Title: Case example: cogeneration experience at Southern California Edison
Company
Title: Workshop proceedings: dual energy use systems
Conference title: Workshop on dual energy use systems

Publication Date: May 1978

24/6/115 (Item 27 from file: 103)
00394878 ERA-03-046386; EDB-78-094058
Title: Some results of air pollution work in Jharia coalfield
Publication Date: Jan 1976

24/6/116 (Item 1 from file: 144)
14283511 PASCAL No.: 99-0488560
Cover sealing system with stabilized by-products from the steel industry
Waste stabilisation and environment : towards the definition of
objectives for stabilization of industrial wastes by taking into account
the potential impact on health and the environment
Stabilisation des dechets et environnement : vers la definition
d'objectifs de stabilisation des dechets industriels par la prise en compte
de l'impact potentiel sur la sante et l'environnement : Lyon-Villeurbanne,
13-16 avril 1999
1999

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24/6/117 (Item 1 from file: 315)
458545
Waste gas treatment with combined sewage sludge incineration in an
industrial power plant.
Orig. Title: Abgasreinigung bei der Klaerschlam-Mitverbrennung in einem
Industriekraftwerk.
PUBLICATION DATE: 1999 (19990000)

24/6/118 (Item 2 from file: 315)
020014
Small-size oil separaor
PUBLICATION DATE: 1973 (730000)
? ? t
s24/7,de/2,4,5,7,9,11,12,14,16,26,27,34,47,48,50,60,61,74,76,81,85,89,90,91
,98

24/7,DE/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2004 Thomson Derwent. All rts. reserv.

015029492
WPI Acc No: 2003-090009/200308
Sulfite treatment method for industrial waste involves

combining industrial waste with calcium sulfite to
 produce insoluble metal sulfur oxide complexes without converting
 sulfite to sulfate

Patent Assignee: HALE E C (HALE-I); WILDEY J E (WILD-I)

Inventor: HALE E C; WILDEY J E

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6476287	B1	20021105	US 9895936	P	19980810	200308 B
			US 99274849	A	19990323	

Priority Applications (No Type Date): US 9895936 P 19980810; US 99274849 A
 19990323

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6476287	B1		4	A62D-003/00	Provisional application US 9895936

Abstract (Basic): US 6476287 B1

Abstract (Basic):

NOVELTY - The method involves combining the industrial waste containing metallic contaminants, with the sufficient amount of calcium sulfite to produce the insoluble metal sulfur oxide complexes, such that the calcium sulfite is stabilized to prevent the conversion of the sulfite to a sulfate.

USE - For treatment of industrial waste containing metallic contaminants e.g. foundry sand, slag.

ADVANTAGE - Enables reducing clumping of treated waste to enable appropriate use of waste in another industrial process. Enables efficient recycling of treated waste, thus enabling use of treated waste as a raw material with improved safety.

pp; 4 DwgNo 0/0

Title Terms: SULPHITE; TREAT; METHOD; INDUSTRIAL; WASTE; COMBINATION;
 INDUSTRIAL; WASTE; CALCIUM; SULPHITE; PRODUCE; INSOLUBLE; METAL;
 SULPHUR; OXIDE; COMPLEX; CONVERT; SULPHITE; SULPHATE

Derwent Class: P35

International Patent Class (Main): A62D-003/00

International Patent Class (Additional): C09C-001/00

24/7,DE/4 (Item 4 from file: 350)
 DIALOG(R)File 350:Derwent WPIX
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014969628

WPI Acc No: 2003-030142/200302

Gasification and slugging combustion system for treating e.g.
 industrial waste, has combustor to produce combustion
 gas and melt ash content using combustible gas from gasification furnace,

and **waste** heat boiler

Patent Assignee: EBARA CORP (EBAR)

Inventor: ENDO H; ISHIKAWA R

Number of Countries: 102 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200286027	A2	20021031	WO 2002JP3904	A	20020419	200302	B
JP 2002317915	A	20021031	JP 2001121386	A	20010419	200304	
TW 524953	A	20030321	TW 2002107921	A	20020418	200365	
EP 1379613	A2	20040114	EP 2002720513	A	20020419	200410	
			WO 2002JP3904	A	20020419		

Priority Applications (No Type Date): JP 2001121386 A 20010419

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200286027 A2 E 25 C10J-003/00

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN
IS KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM
PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA
ZM ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

JP 2002317915 A 8 F23G-005/50

TW 524953 A F23C-011/02

EP 1379613 A2 E C10J-003/00 Based on patent WO 200286027

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT
LI LT LU LV MC MK NL PT RO SE SI TR

Abstract (Basic): WO 200286027 A2

Abstract (Basic):

NOVELTY - A gasification furnace (2) produces combustible gas by gasifying the **waste**. The combustible gas is introduced into a high temperature combustor (3) for producing combustion gas and melting ash content to produce molten **slag**. A **waste** heat boiler (7) recovers heat of combustion gas. A cooling device cools the combustion gas before sending combustion gas to **waste** heat boiler.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for gasification and slugging combustion method.

USE - For treating municipal **wastes**, industrial **waste**, biomass **wastes**, medical **wastes**, automobile **wastes** such as **waste** tire or shredder **dust**.

ADVANTAGE - High temperature combustor produces combustible gas and melts the ash content so the amount of ash discharged is reduced. Harmful substances such as dioxins contained in the exhaust gas are decomposed. The heat recovered from the combustible gas is utilized to produce steam. Cooling device prevents the **dust** from being adhered or attached to parsing regions by which corroding by molten

salt is avoided.

DESCRIPTION OF DRAWING(S) - The figure shows a schematic view of gasification and slugging combustion system.

Gasification furnace (2)

High temperature combustor (3)

Waste heat boiler (7)

pp; 25 DwgNo 2/5

Title Terms: GASIFICATION; SLUG; COMBUST; SYSTEM; TREAT; INDUSTRIAL;
WASTE; COMBUST; PRODUCE; COMBUST; GAS; MELT; ASH; CONTENT; COMBUST;
GAS; GASIFICATION; FURNACE; WASTE; HEAT; BOILER

Derwent Class: A35; H09; Q73

International Patent Class (Main): C10J-003/00; F23C-011/02; F23G-005/50

International Patent Class (Additional): B09B-003/00; F23G-005/00;

F23G-005/02; F23G-005/027; F23G-005/14; F23G-005/46; F27D-017/00

24/7,DE/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014918945

WPI Acc No: 2002-739652/200280

Reduction of emissions, from industrial combustion facilities, involves reacting emissions to form carbonate-containing fertilizer, and applying at least some fertilizer to soil and plants

Patent Assignee: UT BATTELLE LLC (UTBA-N)

Inventor: LEE J W; LI R

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6447437	B1	20020910	US 2000540382	A	20000331	200280 B

Priority Applications (No Type Date): US 2000540382 A 20000331

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6447437	B1	13	C05D-011/00		

Abstract (Basic): US 6447437 B1

Abstract (Basic):

NOVELTY - Reduction of emissions from industrial combustion facilities involves reacting emissions to form at least carbonate-containing fertilizer and applying some of the fertilizer to soil and plants. The emissions, comprising carbon dioxide (2 moles) and nitrogen (1 mole), are reacted with hydrogen (3 moles) and water (2 moles), to produce ammonium bicarbonate (2 moles).

ACTIVITY - Fertilizer.

MECHANISM OF ACTION - None given.

USE - For reducing emission of industrial combustion facilities,

such as fossil fuel **power** plants, biomass **power** plants, fossil fuel-**power** manufacturing plants, steam plants, **petroleum** gas refinery plants, gas flaring facilities, incinerators, **cement** manufacturing plants, aluminum-making plants, coke-making plants, **iron**-making plants and **steel** making plants. The earth mineral carbonates produced by reacting the emissions is used as fertilizer.

ADVANTAGE - Integration of combustion facilities with green house gas solidifies fertilizer production reaction, by converting carbon dioxide, carbon monoxide, sulfur oxide and nitrogen oxide emissions into carbonate containing fertilizers, such as ammonium carbonate and urea. The emission reduction method enhances photosynthetic fixation of carbon dioxide from the atmosphere by the technology-driven production of carbonate-containing fertilizers, and sequesters carbon dioxide by enhanced carbonation of soil and subsoil terrain through the application of the carbonate-containing fertilizers. The emissions are reacted using waste heat from combustion facilities. The method solidifies 90% of carbon dioxide from flue gas and places the carbonate containing fertilizer in soil and subsoil. The method simultaneously reduces contamination of surface water and ground water by nitrate. The method has improved energy efficiency, enhanced economic competitiveness and reduced environmental impacts of both the fossil energy **system** and fertilizer **industry**. The method does not **produce** toxic substance, and **produces** valuable commercial products which can be sold to world wide market. The method enables to inexpensively remove green house gas, and produce valuable products which can be sold to farmers. The method prevents proliferation of dangerous ammonium nitrate fertilizer which are used by terrorists to make bombs. The method enhances photosynthetic production of biomass which is used as renewable biomass energy source to substitute fossil fuels. The method enables to transform several **industrial** green house gas emitters into the **productive system** that can be operated in harmony with the environment, producing economic wealth and at the same time contributing positively towards global sequestration of carbon dioxide and protection of clean air and water resources.

DESCRIPTION OF DRAWING(S) - The figure shows the sequestration of carbon dioxide into soil, ground water, earth subsurface and plant biomass by the application of carbonate containing fertilizer.

pp; 13 DwgNo 3/5

Title Terms: REDUCE; EMIT; INDUSTRIAL; COMBUST; FACILITY; REACT; EMIT; FORM
; CARBONATE; CONTAIN; FERTILISER; APPLY; FERTILISER; SOIL; PLANT
Derwent Class: C04; E36; J01
International Patent Class (Main): C05D-011/00

24/7,DE/7 (Item 7 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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014235211

WPI Acc No: 2002-055909/200208

Integral utilisation of **industrial** refuse consists of
combination of mini **factory** residues volumes for use in the
factory processes

Patent Assignee: AGUIRRE MORALES M L (MORA-I)

Inventor: AGUIRRE MORALES M L

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
BR 9906183	A	20010918	BR 996183	A	19991206	200208 B

Priority Applications (No Type Date): BR 996183 A 19991206

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
BR 9906183	A		1	B09B-003/00	

Abstract (Basic): BR 9906183 A

Abstract (Basic):

NOVELTY - The integral utilisation of industrial refuse comprises biogas, humus, electricity and e.g. paper production without **waste** formation. The production processes of independent mini-factories, including producers also of plastics, **concrete** castings, aluminium and special steels are integrated, with application of materials separated from the processes.

USE - In industry in general.

pp; 1 DwgNo 1/1

Title Terms: INTEGRAL; UTILISE; INDUSTRIAL; REFUSE; CONSIST; COMBINATION;
MINI; FACTORY; RESIDUE; VOLUME; FACTORY; PROCESS

Derwent Class: C04; D16; F09; P35; P43

International Patent Class (Main): B09B-003/00

International Patent Class (Additional): A62D-003/00; B09B-005/00;
C02F-011/04; C05F-009/04

24/7,DE/9 (Item 9 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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012314458

WPI Acc No: 1999-120564/199910

Industrial complex with **power** station, **cement**
plant and **steel-making** - where the plants are linked to
allow better use of energy and reduction of **waste**

Patent Assignee: JGC CORP (JAGA); SUMITOMO OSAKA CEMENT CO LTD (SUMD);
KYOEI SEIKO KK (KYOE); SUMITOMO CEMENT CO LTD (SUMD)

Inventor: HATANO Y; KURUMADA N; MUKAI K; NOGUCHI K; OKADA T; SAKURAI A;

TAKASHIMA H; TAMURA K; TODO F; YAGI T

Number of Countries: 007 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9902253	A1	19990121	WO 98JP3025	A	19980706	199910 B
JP 11019504	A	19990126	JP 97195246	A	19970707	199914
BR 9810682	A	20000822	BR 9810682	A	19980706	200050
			WO 98JP3025	A	19980706	
US 20020047230	A1	20020425	US 2000462291	A	20000106	200233
			US 2001978021	A	20011017	

Priority Applications (No Type Date): JP 97195246 A 19970707

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9902253 A1 E 36 B01J-019/00

Designated States (National): BR ID MX RU US VN

JP 11019504 A 14 B01J-019/00

BR 9810682 A B01J-019/00 Based on patent WO 9902253

US 20020047230 A1 C21B-015/00 Div ex application US 2000462291

Abstract (Basic): WO 9902253 A

Basic **industrial plant complex** comprising an oil refinery, an **oil-fired power plant**, a **cement plant** and a **steel-making plant** constructed in close proximity to or adjacent to each other, and **combined** through a transporter for partially or completely supplying product, byproduct or waste material from a plant in the **complex** as a fuel, power source and/or raw material for products to another plant in the **complex**. Also claimed is a similar **complex** without the **oil refinery**.

ADVANTAGE - The **combination** of plants allows improved energy efficiency and reduced **waste** production compared to separate plants. Linkage also results in more efficient use of land reducing investment and running costs. The plant is more environmentally friendly than prior art. **Waste** gas from one part of the plant can be used as a raw material in another.

Dwg.1/9

Title Terms: INDUSTRIAL; COMPLEX; POWER; STATION; CEMENT; PLANT; STEEL; PLANT; LINK; ALLOW; ENERGY; REDUCE; WASTE

Derwent Class: E36; H05; J01; L02; M24

International Patent Class (Main): B01J-019/00; C21B-015/00

International Patent Class (Additional): C04B-007/36

24/7,DE/11 (Item 1 from file: 347)
 DIALOG(R) File 347:JAPIO
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05886313

COMPOSITE POWER GENERATING PLANT

PUB. NO.: 10-169413 [JP 10169413 A]
PUBLISHED: June 23, 1998 (19980623)
INVENTOR(s): SHINADA OSAMU
YOSHIDA HIROHISA
DEGUCHI YOSHIHIRO
APPLICANT(s): MITSUBISHI HEAVY IND LTD [000620] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 08-331791 [JP 96331791]
FILED: December 12, 1996 (19961212)
JAPIO CLASS: 21.1 (ENGINES & TURBINES, PRIME MOVERS -- Steam); 21.2 (ENGINES & TURBINES, PRIME MOVERS -- Internal Combustion); 46.2 (INSTRUMENTATION -- Testing)
JAPIO KEYWORD: R002 (LASERS); R004 (PLASMA); R018 (FLUIDIZED BEDS); R038 (CHEMISTRY -- Exhaust Gas Desulfurization); R098 (ELECTRONIC MATERIALS -- Charge Transfer Elements, CCD & BBD); R117 (CHEMISTRY -- Liquefied Gases)

ABSTRACT

PROBLEM TO BE SOLVED: To measure a small quantity of corrosive gas component on online with laser in the gas turbine device of a composite power generating plant and monitor high temperature parts such as the cascade of the gas turbine.

SOLUTION: This composite power generating plant has a gas turbine device for generating **power** by expanding **oil** fuel such as gas oil, gas fuel such as LNG, coal gas fuel obtained by **dust**-removing and desulfurizing gasified coal, gas fuel generated from an **iron** manufacturing device such as a blast furnace, gas fuel generated from an **oil refining** plant or high temperature and high pressure combustion gas generated from a pressurized fluid bed boiler, an exhaust heat recovery boiler 9 for generating steam by using the exhaust gas of the gas turbine device as a heat source and a steam turbine power generating device 18 for generating power by the steam generated from the exhaust heat recovery boiler 9. Measurement devices 20 and 21 for measuring gas component with laser through measuring windows are disposed at the inlet air duct part 2 of the air compressor of the gas turbine device and a fuel pipeline part 4 at the inlet of the gas turbine device, so that a small quantity of corrosive gas component in air and the fuel is measured on online with laser and high temperature parts such as the cascade of a gas turbine are monitored.

24/7,DE/12 (Item 2 from file: 347)
DIALOG(R) File 347:JAPIO
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05580050

**INDUSTRIAL WASTE TREATMENT SYSTEM UTILIZING COMBUSTIBLE
GAS PRODUCED BY THERMAL DECOMPOSITION**

PUB. NO.: 09-194850 [JP 9194850 A]
PUBLISHED: July 29, 1997 (19970729)
INVENTOR(s): INOKO JUNICHI
APPLICANT(s): INOKO JUNICHI [000000] (An Individual), JP (Japan)
APPL. NO.: 08-044001 [JP 9644001]
FILED: January 24, 1996 (19960124)
JAPIO CLASS: 14.6 (ORGANIC CHEMISTRY -- Liquid Fuel, Oils & Fats); 13.1
(INORGANIC CHEMISTRY -- Processing Operations); 13.9
(INORGANIC CHEMISTRY -- Other); 14.2 (ORGANIC CHEMISTRY --
High Polymer Molecular Compounds); 32.4 (POLLUTION CONTROL --
Refuse Disposal)

ABSTRACT

PROBLEM TO BE SOLVED: To provide a system wherein industrial wastes are thermally decomposed to produce a high-temperature combustible gas, the gas is burnt while it is forming a flame, and the thermal energy of the waste gas is used in industrial waste treatments chiefly including the incineration of industrial wastes in an incinerator, the melting of aluminum scraps as industrial wastes in an aluminum melter, and the neutralization and drying of waste concrete in a sludge drying oven.

SOLUTION: Waste plastics as industrial wastes are thermally decomposed in a double-kettle type carbonizer 1 to make a formed gas and activated coal. The activated coal can be used in many purposes such as an adsorbent for sewage treatment, a dry activated carbon adsorbent, a deodorizing agent and an earthquake-proofing material, and the formed gas is used as a fuel for an incinerator 3. Industrial wastes are burnt in the incinerator. The thermal energy of the waste gas is used to dissolve aluminum scraps as industrial wastes in an aluminum melter 5, and the melt is made into recycled aluminum. The heat of the waste gas is used to dry sludge in a sludge drier 8 to recycle the sludge. Water-soluble substances and soot are removed from the waste gas by means of a submerging apparatus 10, its heat is used in a heat exchanger 12, and the gas is converted into nonpolluting waste gas by utilizing the adsorptive action of the dry activated carbon 14.

24/7,DE/14 (Item 2 from file: 353)
DIALOG(R)File 353:Ei EnCompassPat(TM)
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0369557 EnCompassPat Document No.: 200315866 Derwent WPI Accession No.:

03-450296

Melt reduction **iron**-smelting dimethyl ether production and power generation **combined** production method and installation

Patent Assignee: IRON & STEEL GEN RES INST

Patent (CC,No,Date): CN 1394965 030205

Int Pat Class: C07C-041/01; C21B-011/02

Ei EnCompassPat Bulletin Headings: CHEMICAL PRODUCTS; OXYGEN COMPOUNDS;

PETROLEUM REFINING AND PETROCHEM

Abstract:

NOVELTY - The present invention relates to a method which adopts the gas produced in the melt reducing **iron**-smelting process, through the processes of heat exchange, **dust**-removing, desulfuration, pressurizing, adding catalyst and inert solvent and utilizing slurry bed reactor to produce dimethyl ether and utilizes waste heat to make power generation. DETAILED DESCRIPTION - The **system** method includes melt reducing **iron**-smelting equipment, synthesis gas cleaning equipment, dimethyl ether synthesis equipment, product separation equipment and power generator equipment.

D (Dwg.No.0/0

Index Terms: ACTIVITY; BED; *C2-*P; CATALYST; CONSERVATION; DEDUSTING; DESULFURIZATION; ECONOMIC FACTOR; **ELECTRIC POWER**; ENERGY CONSERVATION; ENERGY SOURCE; *ETHER-*P; *ETHERIFICATION; GAS TREATING; GENERATING; HEAT; HEAT TRANSFER; INERT; **IRON ORE**; LIQUID; MANUFACTURED GAS-A; METALLURGICAL FURNACE; METALLURGY; *METHYL ETHER-*P; MOLTEN; OPERATING CONDITION; ORE; PHYSICAL PROPERTY; PHYSICAL SEPARATION; PRESSURE; REACTOR; REDUCTION REACTION; *SATURATED CHAIN-*P; *SINGLE STRUCTURE TYPE-*P; SLURRY; SMELTER; SOLVENT; SUSPENSION; SYNTHESIS GAS-A; TREATING; WASTE HEAT

24/7,DE/16 (Item 4 from file: 353)

DIALOG(R)File 353:Ei EnCompassPat(TM)

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0357532 EnCompassPat Document No.: 200303408 Derwent WPI Accession No.: 03-030142

Gasification and slugging combustion **system** for treating e.g. **industrial waste**, has combustor to **produce** combustion gas and melt ash content using combustible gas from gasification furnace, and **waste** heat boiler

Patent Assignee: EBARA CORP

Patent (CC,No,Date): WO 200286027 021031

Designated States: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MA; MD; MG; MK; MN; MW; MX; MZ; NO; NZ; OM; PH; PL; PT; RO; RU; SD; SE; SG; SI; SK; SL; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VN; YU; ZA; ZM; ZW; AT; BE; CH; CY; DE; DK; EA; ES; FI; FR; GB; GH; GM; GR; IE; IT;

KE; LS; LU; MC; MW; MZ; NL; OA; PT; SD; SE; SL; SZ; TR; TZ; UG; ZM; ZW
 Int Pat Class: C10J-003/00
 Ei EnCompassPat Bulletin Headings: NON-FOSSIL FUEL SOURCES; PETROLEUM
 SUBSTITUTES

Abstract:

NOVELTY - A gasification furnace (2) produces combustible gas by gasifying the **waste**. The combustible gas is introduced into a high temperature combustor (3) for producing combustion gas and melting ash content to produce molten **slag**. A **waste** heat boiler (7) recovers heat of combustion gas. A cooling device cools the combustion gas before sending combustion gas to **waste** heat boiler. DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for gasification and slugging combustion method. USE - For treating municipal **wastes**, industrial **waste**, biomass **wastes**, medical **wastes**, automobile **wastes** such as **waste** tire or shredder **dust**. ADVANTAGE - High temperature combustor produces combustible gas and melts the ash content so the amount of ash discharged is reduced. Harmful substances such as dioxins contained in the exhaust gas are decomposed. The heat recovered from the combustible gas is utilized to produce steam. Cooling device prevents the **dust** from being adhered or attached to parsing regions by which corroding by molten salt is avoided. DESCRIPTION OF DRAWING(S) - The figure shows a schematic view of gasification and slugging combustion system. Gasification furnace 2 High temperature combustor 3 Waste heat boiler 7 Dwg.2/5 (25pp Dwg.No.2/5

Index Terms: AIR POLLUTANT; ASH CONTENT; BIOMASS-A; BOILER; COMBUSTOR; COMPOSITION; FULL SCALE; FURNACE; *GASIFICATION; HEALTH/DISEASE; HEAT; HEATING EQUIPMENT; HIGH TEMPERATURE; LIQUID; *MANUFACTURED GAS-*P; OPERATING CONDITION; POLLUTANT; SOLID **WASTE**-A; STACK GAS; TEMPERATURE; TOXIC EFFECT; **WASTE** DERIVED; ***WASTE** DISPOSAL; **WASTE** GAS; **WASTE** HEAT; **WASTE** MATERIAL-NA

24/7,DE/26 (Item 14 from file: 353)
 DIALOG(R) File 353:Ei EnCompassPat(TM)
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0291919 EnCompassPat Document No.: 9910689 Derwent WPI Accession No.: 99-120564

Industrial complex with power station, cement plant and steel-making - where the plants are linked to allow better use of energy and reduction of **waste**

Patent Assignee: JGC CORP SUMITOMO OSAKA CEMENT CO LTD

Patent (CC,No,Date): WO 9902253 990121

Designated States: BR; ID; MX; RU; US; VN

Int Pat Class: B01J-019/00

Ei EnCompassPat Bulletin Headings: AIR POLLUTION CONTROL; ENVIRONMENT, TRANSPORT & STORAGE; EQUIPMENT-MATERIALS-UTILITIES; HEALTH &

ENVIRONMENT; PETROLEUM PROCESSES; PETROLEUM REFINING
AND PETROCHEM

Abstract:

Basic industrial plant complex comprising an oil refinery, an oil-fired power plant, a cement plant and a steel-making plant constructed in close proximity to or adjacent to each other, and combined through a transporter for partially or completely supplying product, byproduct or waste material from a plant in the complex as a fuel, power source and/or raw material for products to another plant in the complex. Also claimed is a similar complex without the oil refinery. ADVANTAGE - The combination of plants allows improved energy efficiency and reduced waste production compared to separate plants. Linkage also results in more efficient use of land reducing investment and running costs. The plant is more environmentally friendly than prior art. Waste gas from one part of the plant can be used as a raw material in another. (36pp
Dwg.No.1/9

Index Terms: AIR POLLUTANT; BYPRODUCT; CATALYST; CEMENT; COMPOUNDS; COST; COST REDUCTION; CRUDE OIL; CRUDE OIL (WELL); *DESULFURIZATION; DUST; ECONOMIC FACTOR; EFFICIENCY; ELECTRIC ARC; ELECTRIC DISCHARGE; ELECTRICITY; ENERGY; ENVIRONMENTAL PROTECTION; *FLUE GAS DESULFURIZATION; FUEL OIL; GAS OIL; *GAS TREATING; GASOLINE STOCK; GROUP VIA; GYPSUM; HEALTH/DISEASE; HEATING FUEL; HEAVY OIL; HIGH TEMPERATURE; *INDUSTRIAL PLANT; INVESTMENT; KEROSENE; LIGHT GAS OIL; LIMESTONE; LIQUID; MINERAL; *OIL REFINERY; OPERATING CONDITION; PETROLEUM DISTILLATE; PETROLEUM FRACTION; POLLUTANT; *POLLUTION CONTROL; PORTLAND CEMENT; POWER PLANT; ROCK; SEA; SLAG; SLUDGE; SOIL (EARTH); SOLID; SPENT; STACK GAS; STEAM; STEEL PLANT; STORAGE FACILITY; SULFUR; SULFUR ORGANIC; TANK; TEMPERATURE; TOXIC EFFECT; TRANSPORTATION; *TREATING; TREATING UNIT; WASTE GAS; WASTE MATERIAL; WASTE MINIMIZATION; WATER; WATER VAPOR

24/7,DE/27 (Item 15 from file: 353)
DIALOG(R)File 353: Ei EnCompassPat(TM)
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0277184 EnCompassPat Document No.: 9815166 Derwent WPI Accession No.: 98-043331

Cracking converter changing high calorific value waste e.g. plastics, fat and vegetable oil to heating fuel and diesel oil - employs virtually worthless wastes, e.g. blast furnace slag and spent air purification material, as catalysts for liquid- and vapour-phase conversion at comparatively low temperatures

Patent Assignee: GUT GES UMWELTTECHNIK MBH
Patent (CC,No,Date): DE 19623732 971218

Int Pat Class: C08J-011/10; C10L-001/00

Ei EnCompassPat Bulletin Headings: CATALYSTS/ZEOLITES; ENVIRONMENT, TRANSPORT & STORAGE; HEALTH & ENVIRONMENT; NON-FOSSIL FUEL SOURCES; PETROLEUM PROCESSES; **PETROLEUM REFINING** AND PETROCHEM; PETROLEUM SUBSTITUTES; PETROLEUM-PROCESSING CATALYSTS; SOLID WASTES

Abstract:

A novel catalytic unit transforms high calorific value waste materials to heating- or diesel oil. In the new plant, the reaction vessel (1) is oil- (18) or electrically- heated. The catalyst inside this reactor comprises **slag** (5) and residues which contain an active catalyst substance. **Connected** after the reactor, there are a vapour treatment unit (7), a condenser (9) and a product preparation unit (10). Preferably, the reactor (1) is part-filled with catalyst and has an electrically-driven stirrer. The catalyst active material is a melt **slag**, e.g. blast furnace **slag** from the manufacture of chrome **steel**. In a further vessel, spent poisoned catalyst is melted with the aid of an oxidant gas, and granulated for use as a material of construction. USE - To convert e.g. thermoplastic waste and other high calorific value wastes to heating- or diesel oil. ADVANTAGE - The wastes are cracked catalytically as fluids at 300 deg. C-500 deg. C. Further stages of evaporation, catalytic vapour reaction, condensation and final reaction, form a useful fuel product. A surprising and delightful finding is the catalytic effectiveness of cheap, virtually free, wastes at low temperatures, in reducing the molecular chain length of the plastics. These catalytic waste materials (e.g. the ferrochrome **slag**) contrast starkly with expensive, elaborately-prepared conventional catalysts. Practical conversion plants are detailed. One example converts e.g. waste plastic, fats and tars. A second example treats organic products, e.g. rape oil, to produce a useful fuel. Commercially-available ancillary plants are nominated. Further quantified details are supplied. The processes are thermally self-supporting. (6pp Dwg.No.2/2

Index Terms: ACTIVITY; ALLOY **STEEL**; BLAST FURNACE; BURNER; *CATALYST; CATALYST ACTIVITY; CATALYST POISONING; CERIUM; CHROMIUM; COMPRESSION IGNITION ENGINE; CONDENSATION; CONDENSER; CONSERVATION; CONSTRUCTION MATERIAL; COST; DECOMPOSITION; DIESEL ENGINE; DRIVE; ECONOMIC FACTOR; ELECTRIC GENERATOR; ELECTRIC MOTOR; **ELECTRIC POWER**; **ELECTRIC POWER** SOURCE; ENERGY CONSERVATION; ENERGY SOURCE; ENGINE; FERROUS ALLOY; FORMING; FUEL OIL-P; GAS; GAS OIL-P; GAS TREATING; GRANULATION; GROUP IIIB; GROUP VIB; GROUP VIII; HEAT OF COMBUSTION; HEAT OF REACTION; HEATING EQUIPMENT; HEATING FUEL-P; HIGH BTU; INDUSTRIAL PLANT; **INTEGRATED**; INTERNAL COMBUSTION ENGINE; LANTHANUM; LIQUEFACTION; *LIQUEFACTION PROCESS; LIQUID; LOW TEMPERATURE ; MECHANICAL PROPERTY; METALLURGICAL FURNACE; MINERAL; MOLTEN; NOBLE METAL; OPERATING CONDITION; OXIDATION REACTION; PHASE CHANGE; PHYSICAL PROPERTY; PLASTIC-A; PLASTICITY; PLATINUM; PLATINUM METALS; POLLUTION CONTROL; PRECIOUS METAL; PRIOR TREATMENT; RAPE SEED OIL-A; RARE EARTH; *REACTOR; RESISTANCE HEATING; ROTOR; **SLAG**; SOLID WASTE; SPENT;

STEEL; *SYNTHETIC OIL-*P; TAR-A; TEMPERATURE; TEMPERATURE 300 TO 600 C; THERMODYNAMIC PROPERTY; THERMOPLASTIC; TRANSITION METAL; TREATING; VAPOR; VAPORIZATION; VEGETABLE OIL-A; WASTE DERIVED; WASTE DISPOSAL; WASTE MATERIAL-NA

24/7, DE/34 (Item 1 from file: 354)
DIALOG(R) File 354: Ei EnCompassLit(TM)
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728619 EnCompassLit Document No.: 200401189
MIX" concept links refining operations with **power** and construction industries

Author: Natsuo T.; Yagi T.

Corporate Source: JGC Corp.

Source: Hydrocarbon Processing 82/12 71-72, 74-75 (ISSN 0018--8190)
(December 2003)

Language: English

ISSN: 0018--8190

CODEN: HYPRA

Journal Name: Hydrocarbon Processing

Document Type: JOURNAL ARTICLE

Publication Date: 03/2000

Ei EnCompassLit Bulletin Headings: CHEMICAL PRODUCTS AND PROCESSES;
ECONOMICS AND STATISTICS; MISCELLANEOUS; OXYGEN COMPOUNDS;
PETROLEUM REFINING AND PETROCHEMICALS

Abstract:

New **integration** concepts can reduce capital investment by **integrating** process and waste streams within a multi-industries **complex** (MIX). For example, growing economies need **electrical power**, automotive fuels, and building materials, e.g., **steel** and **cement**. These emerging sites require small or medium-size facilities. **Integrating** these industries within a **complex** enables opportunities to import and export products and wastes that enable down-sizing of the stand-alone unit. A discussion covers the MIX model, which **integrates** different categories of industry, of small to medium size to meet market requirements for developing region; candidate industries that may benefit from **integrating** products and services, e.g., fuel production (**petroleum refinery**, gas-based fuel supply, e.g., dimethyl ether), **power** generation, material production (**cement** plant and **steel** mill); and economic improvements. 2 flow diagrams, diagram, 3 tables

Index Terms: BUSINESS OPERATION; C2; **CEMENT**; COST; COST REDUCTION; ECONOMIC FACTOR; **ELECTRIC POWER**; ENERGY SOURCE; ETHER; FERROUS ALLOY; ***INDUSTRIAL PLANT**; **INTEGRATED**; INVESTMENT; MARKETING; METHYL ETHER; *MOTOR FUEL; *OIL **REFINERY**; **POWER PLANT**; SATURATED CHAIN; SINGLE STRUCTURE

TYPE; **STEEL**; **STEEL PLANT**; WASTE MATERIAL

24/7,DE/47 (Item 14 from file: 354)
DIALOG(R)File 354:Ei EnCompassLit(TM)
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0259906 EnCompassLit Document No.: 2781225 Chemical Abstr CA
91213577

TECHNOLOGICAL **SYSTEM** FOR WASTE-FREE PROCESSING OF THE THERMAL

ELECTRIC POWER PLANT ASH

Author: TYURNIKOVA V I; KRASNIKOVA N A; PANIN A S; KONOVALENKO P F

Corporate Source: INST OBOGASHCH TVERD GOR ISKOP USSR

Source: KHIM. TVERD. TOPL. (MOSCOW) (4) 54-6 (1979) CHEM. ABSTR. ABSTR.NO.

213577 V91 N.25-26

Language: Russian

ISSN: 0009-2258

Journal Name: Chemical Abstracts

Document Type: ABSTRACT

Publication Date: 790000

Ei EnCompassLit Bulletin Headings: AIR AND WATER CONSERVATION; FUEL OILS;
OTHER SPECIALTIES; **PETROLEUM REFINING** AND PETROCHEM; SOLID
WASTES

Index Terms: ABSTRACT; AGGREGATE; ALUMINUM; ALUMINUM OXIDE; *ASH; CALCIUM;
CEMENT; *COAL; **CONCRETE**; CONSTRUCTION MATERIAL; DENSITY;
DISTILLATE FUEL OIL; EASTERN EUROPE; *FLOTATION; FUEL OIL; GAS OIL;
GROUP IIA; GROUP IIIA; GROUP IVA; GROUP VIA; GROUP VIII; HEAT OF
COMBUSTION; HEAT OF REACTION; HEATING FUEL; IDE; *INDUSTRIAL PLANT;
IRON; **IRON OXIDE**; **IRON OXIDE**, FE₂O₃; KEROSENE; LIGHT
GAS OIL; LIME; MAGNESIUM; MAGNESIUM OXIDE; OXYGEN; PHYSICAL PROPERTY;
*PHYSICAL SEPARATION; POROSITY; *POWER PLANT; *RECLAIMING; RECYCLING;
RUSSIA; SILICA; SILICON; SULFUR; SULFUR OXIDE; SULFUR TRIOXIDE; SURFACE
ACTIVE AGENT; THERMODYNAMIC PROPERTY; *WASTE DISPOSAL; *WASTE MATERIAL

24/7,DE/48 (Item 15 from file: 354)
DIALOG(R)File 354:Ei EnCompassLit(TM)
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0171863 EnCompassLit Document No.: 2206235
OFFSHORE METHANOL

Author: BALAENA STRUCTURES LTD

Source: EUR CHEM NEWS V27 N.700 32 (8/22-29/75)

Language: English

Publication Date: 750822

Ei EnCompassLit Bulletin Headings: MISC. TRANSPORTATION & STORAGE; NATURAL
GAS, NAT. GASOL., LPG; OXYGEN COMPOUNDS; **PETROLEUM REFINING**
AND PETROCHEM; TRANSPORTATION AND STORAGE

Abstract:

OFFSHORE METHANOL According to Balaena Structures Ltd., a U.K. firm of design engineers whose expertise lies in the design of large ships, methanol plants of 2000 metric ton/day capacity could be built on **steel** platforms resembling the **concrete** structures now appearing in the North Sea, at a cost of pnd 100-140 million. The scheme would provide an acceptable alternative to pipelines in fields where production is low. U.K. government policy is to allow well head flaring only as a last resort, and a study has already been commissioned on the feasibility of a gas-gathering and trunkline **system** in the North Sea. Balaena, working closely with Imperial Chemical Industries Ltd., has also considered the feasibility of well head production of LNG, ammonia, and **electric power**.

Index Terms: AMMONIA; CAPACITY; CARGO; *CHEMICAL PLANT; CONSTRUCTION MATERIAL; *C1; DAILY; DESIGN; ECONOMIC FACTOR; **ELECTRIC POWER**; ENERGY SOURCE; ENGINEERING; FERROUS ALLOY; GATHERING LINE; GOVERNMENT; GROUP VA; HYDROGEN; IDE; IMPERIAL CHEMICAL; *INDUSTRIAL PLANT; INVESTMENT; LIQUEFIED NATURAL GAS; *METHANOL; *MONOHYDROXY; NATIONAL; *NATURAL GAS; NITROGEN; NORTH SEA; *OFFSHORE; OIL AND GAS FIELDS; PIPELINE; POWER PLANT; *SATURATED CHAIN; SEA; *SINGLE STRUCTURE TYPE; **STEEL**; SUPPLY; TRANSPORTATION; TRUNK PIPELINE; UNITED KINGDOM; WESTERN EUROPE

24/7,DE/50 (Item 2 from file: 2)

DIALOG(R) File 2:INSPEC

(c) 2004 Institution of Electrical Engineers. All rts. reserv.

01372975 INSPEC Abstract Number: B79033355

Title: Industrial cogeneration: problems and promise

Author(s): Icerman, L.; Staples, D.M.

Author Affiliation: Dept. of Technol. & Human Affairs, Washington Univ., St. Louis, MO, USA

Journal: Energy vol.4, no.1 p.101-17

Publication Date: Feb. 1979 Country of Publication: UK

CODEN: ENEYDS ISSN: 0360-5442

Language: English Document Type: Journal Paper (JP)

Treatment: General, Review (G)

Abstract: Considerable potential for industrial cogeneration of electricity and process heat is currently available in the US. A number of prime mover technologies suitable for application cogeneration facilities are already technically proven in other conventional **systems**. Industries with particularly attractive opportunities include paper and pulp, chemical, **petroleum refining**, **iron** and **steel**, and **cement** manufacturers. The apparent technical potential is limited significantly by economic, environmental, and regulatory factors, as well as by the need for new dimensions in industry and utility cooperation. Although substantial societal benefits in the form of energy conservation

are available from a strong commitment to industrial cogeneration **systems**, many obstacles to **systems** deployment remain, which will not be readily overcome without the adoption of policy incentives. (46 Refs)

Subfile: B

Descriptors: **electric power** generation; industrial plants

24/7,DE/60 (Item 9 from file: 6)
DIALOG(R)File 6:NTIS
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1093688 NTIS Accession Number: DOE/TIC-10403

Identification of Alternative Fuels for Industrial Major Fuel Burning Installation

Energy Resources Co., Inc., Cambridge, MA.

Corp. Source Codes: 056164000; 9502198

Sponsor: Department of Energy, Washington, DC.

Nov 76 130p

Languages: English

Journal Announcement: GRAI8409; NSA0000

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NTIS Prices: MF A01

Country of Publication: United States

The objective of this task was to identify the current uses of alternate fuels by the industrial sector. Alternate fuels are defined as all fuels other than coal, oil and gas and include **electric power** and combustible gaseous, liquid, and solid wastes. Applications of alternate fuels was examined in the following industries: **petroleum refining**, paper, food, chemicals, stone-clay-glass and primary metals, including **iron** and **steel**, aluminum and copper. In all of the industries only major fuel-burning installations combusting more than 99 million Btu's per hour were studied. In many cases alternate fuels are supplemented with conventional fuels or an auxiliary conventional firing method is available on standby. The technical and economic feasibility of alternate fuel use in each industry was examined and evaluated. It was concluded that: although the off-gases in **iron** and **steel** plants have fuel value, it is costly to collect and distribute these gases to the major fuel burners in a plant; no significant source of alternative fuels for **petroleum refining** exists at present; the food industry must establish, on a plant-to-plant basis, which wastes are worth using as fuel; no untapped alternative fuels for the chemical industry were identified; on a heating value basis, the cost of handling paper industry forest trash for fuel usage is equal to the cost of burning low sulfur oil; there is little experience in the nonferrous primary metal,

glass, or **cement** industries in using any alternate fuel except **electric power**, which appears to be economically attractive for industrial direct heating; and no applications of municipal wastes in industrial major fuel burning installations were identified.

Descriptors: *Ceramics industry; *Chemical industry; *Food industry; *Glass industry; *Metal industry; *Paper industry; *Petroleum refineries; Combustion; Economic analysis; Electric power; Feasibility studies; Fuel substitution; Gaseous wastes; Liquid wastes; Municipal wastes; Solid wastes ; Technology assessment

24/7,DE/61 (Item 10 from file: 6)
DIALOG(R) File 6:NTIS
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0992871 NTIS Accession Number: DE82014242

Direct Industrial Utilization of Coal

Brookhaven National Lab., Upton, NY.

Corp. Source Codes: 004545000; 0936000

Sponsor: Department of Energy, Washington, DC.

Report No.: BNL-51489

Sep 81 192p

Languages: English

Journal Announcement: GRAI8303; NSA0700

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NTIS Prices: PC A09/MF A01

Country of Publication: United States

Contract No.: AC02-76CH00016

The industrial sector consumes about 34% of the total national energy usage. Almost all of this energy has been supplied by oil or gas. This study identifies the major industrial groups that account for the major portion of this consumption of premium fuels, and then analyzes the potential for conversion of this usage to the direct combustion of coal. Functional requirements for the eight most significant potential industrial combustors are identified in terms of the process requirement. The report highlights basic and vital distinctions between the use of coal in new plants and the backfitting of coal into plants designed for and currently operating on either oil or gas. While new plants can be designed to use any specified fuel, backfits are subject to a hierarchical order: a plant design for coal can be backfitted for oil or gas; a plant designed for oil can be backfitted for gas. Eight industrial groups chosen out of a possible thirteen industrial groups accounted for more than 60% of the total manufacturing sector consumption of energy in 1974. The selected industries

are: iron and steel, ammonia, olefins, petroleum refining, aluminum, paper and allied products, cement, and glass. Five combustion technologies were considered: pulverized coal combustion, stoker firing, coal-oil mixtures (COM), coal-water mixtures (CWM), and two-stage combustion. The conclusions reached vary for each industry considered. However, the generic result of these studies is that further development of (a) Two-Stage Combustion with **integrated** dry ash or **slag** removal and (b) Coal-Water Mixtures, appear to have the potential of increasing direct coal combustion by the manufacturing sector of American industry. (ERA citation 07:042216)

Descriptors: Industrial plants; *Fossil-fuel power plants; *Fuel substitution; *Fuel slurries; Boilers; Fuels; Coal; Fuel oils; Natural gas; Fuel consumption; Feasibility studies; Combustion; Mixtures; Usa; Metal industry; Petroleum industry; Paper industry; **Cement** industry; Glass industry; Ammonia; Alkenes; Aluminium; Production; Numerical data; Steam generators

24/7,DE/74 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)
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01907614

E.I. Monthly No: EIM8511-071160

Title: ENERGY AND THE STEEL **INDUSTRY**. INTRODUCTION TO THE REPORT ON **INTEGRATED STEEL PLANTS**.

Author: Brooks, S. H.

Corporate Source: British Steel Corp, Engl

Conference Title: Steel and Energy: Proceedings of Seminar.

Conference Location: Brussels, Belg Conference Date: 19830214

Sponsor: Int Iron & Steel Inst, Committee on Technology, Brussels, Belg

E.I. Conference No.: 05174

Source: Publ by Int Iron & Steel Inst, Brussels, Belg p 35-57

Publication Year: 1983

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8511

Abstract: The paper first defines and evaluates a reference plant. That is a plant of 8×10^6 t/a which would be 'balanced' as far as coke and sinter supplies were concerned; would buy pellets and oxygen and would make a wide range of products - including a high level of finishing operations. The effects of raw materials and operating practices on the basic reference plant are then dealt with. New and improved steelmaking technologies are reviewed, and one way the reference plant structure can be used to compute the effect of changes in plant practice is illustrated. It is shown that the use of the Reference Plants to analyze the results from Real Plants is an especially valuable technique.

Descriptors: IRON AND STEEL PLANTS--*Energy Conservation; STEEL--

Continuous Casting; STEAM TURBINES; **WASTE** HEAT UTILIZATION

24/7,DE/76 (Item 4 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)
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00629455

E.I. Monthly No: EI7706040875

E.I. Yearly No: EI77044756

Title: Exploratory Processing of **Integrated** Steel Plant
Wastes Using the Rotary Kiln Method in an **Industrial**
Plant.

Title: VERSUCHE ZUER VERARBEITUNG VON HUETTENWERKSABFAELLEN NACH DEM
WAEELZVERFAHREN IN EINER BETRIEBSANLAGE.

Author: Maczek, Helmut; Rellermeyer, Heinrich; Kossek, Guenter; Serbent,
Harry

Source: Stahl und Eisen v 96 n 24 Dec 2 1976 p 1233-1238

Publication Year: 1976

CODEN: STEIA3 ISSN: 0340-479X

Language: GERMAN

Journal Announcement: 7706

Abstract: A large scale investigation, late in 1975, is described in
which a mixture of blast furnace top gas sludge, LD sludge, and LD
dust was successfully processed in a rotary kiln for recovery of the
iron in a form suitable for use in the blast furnace. After removal of zinc
and lead, a product containing about 62% total Fe, 0. 8% S, 14% CaO, 0. 6%
MgO, and 7% SiO//2 was obtained. Flow charts of the process are given.
Costs are estimated. In German.

Descriptors: IRON AND STEEL PLANTS--***Waste** Utilization

24/7,DE/81 (Item 5 from file: 94)
DIALOG(R)File 94:JICST-EPlus
(c)2004 Japan Science and Tech Corp(JST). All rts. reserv.

02776425 JICST ACCESSION NUMBER: 96A0361965 FILE SEGMENT: JICST-E
On **integrated industrial waste** disposing **facility**.

KIRIYAMA TATSUHIKO (1)

(1) Takuma Co., Ltd.

Nippon Bana Kenkyukai Kaiho, 1996, NO.81, PAGE.63-71, FIG.4, TBL.2, REF.3

JOURNAL NUMBER: L2433AAH ISSN NO: 0913-3828

UNIVERSAL DECIMAL CLASSIFICATION: 662.9.041 628.544/.545

LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan

DOCUMENT TYPE: Journal

ARTICLE TYPE: Commentary

MEDIA TYPE: Printed Publication

ABSTRACT: The most important equipment among the constituents of the titled facility is the incineration furnace. The incineration furnace is required to be capable of incinerating as many kinds and varieties of refuse as possible when the co-burning practice is employed. There exists no all-round incineration furnace capable of coping with all kinds of refuse. An incineration system consisting of a rotary kiln and a stoker to attain a reasonable co-burning is developed, and its outline is presented.

DESCRIPTORS: industrial **waste**; thermochemical treatment of **waste**; incinerator; stoker; **waste** heat boiler; electric precipitation; exhaust gas treatment; rotary furnace

BROADER DESCRIPTORS: **waste**; **waste** treatment; treatment; furnace; element of combustion equipment; special boiler; boiler; **dust** collection; separation

24/7,DE/85 (Item 9 from file: 94)
DIALOG(R) File 94:JICST-EPlus
(c)2004 Japan Science and Tech Corp(JST). All rts. reserv.

01920510 JICST ACCESSION NUMBER: 93A0994153 FILE SEGMENT: JICST-E
An Outlook on Recent Industrial **Systems** Technology.

TAKAHASHI HIROSHI (1)

(1) Fuji Electric Co., Ltd.

Fuji Jiho(Fuji Electric Journal), 1993, VOL.66,NO.10, PAGE.587-588

JOURNAL NUMBER: F0080AAJ ISSN NO: 0367-3332 CODEN: FUJIA

UNIVERSAL DECIMAL CLASSIFICATION: 621.3:62/69

LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan

DOCUMENT TYPE: Journal

ARTICLE TYPE: Commentary

MEDIA TYPE: Printed Publication

ABSTRACT: This paper discusses electrical **plant** and **systems** technology in basic material **industry** and heavily equipped industry that are major in industrial structure such as **iron** and **steel**, nonferrous metals, pulp and paper, synthetic fiber and film, **oil refinery**, chemicals, **cement**, and glass industry. It also gives an outlook on environmental change around these fields and the technical trends of basic technologies in these fields such as control technology, plant engineering, information **systems**, **power** electronics and **power** conversion **systems**, and substation **systems**. (author abst.)

DESCRIPTORS: **electric power** application; motor drive; **power** incoming installation; information **system**; **power** electronics; **power** converter; control equipment; technological review

BROADER DESCRIPTORS: utilization; drive; operation and driving; motor application; electric installation; facility; computer application **system**; **system**; electronics; technology; electric converter

; converter; equipment; review

24/7,DE/89 (Item 1 from file: 103)
DIALOG(R)File 103:Energy SciTec
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04897627 NEDO

Title: FY 1999 report on the results of the contract project 'The model project for **facilities** for effective utilization of **industrial waste** at the **industrial complex** in Thailand.' Separate Volume 6 - FY 1999 project; 1999 nendo seika hokokusho. Tai ni okeru kogyo danchi sangyo haikibutsu yuko riyo setsubi moderu jigyo - 6

Author(s): NONE

Corporate Source: New Energy and Industrial Technology Development Organization, Tokyo (Japan)

Source: PBD: Mar 2001

Publication Date: 20010301

Availability Date: 20030217

Report Number(s): JP-NEDO--010019033

OSTI Number(s): DE20281009

Contract Number (Non-DOE): TRN JN0240263

Language: Japanese

Medium/Dimensions: 600 pages

Availability: Available to ETDE participating countries only(see www.etde.org); commercial reproduction prohibited; OSTI as DE20281009

Abstract: For the purpose of reducing the consumption of fossil fuel by **recycling industrial waste** for effective use as petroleum substituting energy in Thailand where the amount of industrial **waste** is expected to increase, a model project on facilities for effective use of industrial **waste** at the industrial complex was carried out, and the FY 1999 results were reported. **Concretely**, the industrial **waste** generated from each plant at the industrial complex owned by IEAT is to be incinerated in fluidized bed incinerator, and the process steam is to be generated by recovering **waste** heat by **waste** heat recovery boiler and to be supplied to plants within the complex. In this fiscal year, the first year of the project, the attachment to the agreement was prepared in terms of the allotment of the project work between Japan and Thailand, various kinds of gist, schedules, etc. and signed. After that, the following were conducted at the Japan side according to the attachment to the agreement: determination of the basic specifications for facilities, basic design, detailed design, manufacture of a part of the equipment, etc. Separate Volume 6 included drawings of assembling of the equipment such as crane, crusher and valve. (NEDO)

Descriptors: INDUSTRIAL WASTES; WASTE PRODUCT UTILIZATION;
FOSSIL FUELS; FUEL SUBSTITUTION; PETROLEUM; FLUIDIZED-BED COMBUSTORS;

**WASTE HEAT BOILERS; WASTE HEAT UTILIZATION; DESIGN;
MANUFACTURING; CRANES; VALVES**

24/7,DE/90 (Item 2 from file: 103)
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04897626 NEDO

Title: FY 1999 report on the results of the contract project 'The model project for **facilities** for effective utilization of **industrial waste** at the **industrial complex** in Thailand.' Separate Volume 5 - FY 1999 project; 1999 nendo seika hokokusho. Tai ni okeru kogyo danchi sangyo haikibutsu yuko riyo setsubi moderu jigyo - 5

Author(s): NONE

Corporate Source: New Energy and Industrial Technology Development
Organization, Tokyo (Japan)

Source: PBD: Mar 2001

Publication Date: 20010301

Availability Date: 20030217

Report Number(s): JP-NEDO--010019032

OSTI Number(s): DE20281008

Contract Number (Non-DOE): TRN JN0240262

Language: Japanese

Medium/Dimensions: 360 pages

Availability: Available to ETDE participating countries only(see www.etde.org); commercial reproduction prohibited; OSTI as DE20281008

Abstract: For the purpose of reducing the consumption of fossil fuel by **recycling industrial waste** for effective use as petroleum substituting energy in Thailand where the amount of industrial **waste** is expected to increase, a model project on facilities for effective use of industrial **waste** at the industrial complex was carried out, and the FY 1999 results were reported. **Concretely**, the industrial **waste** generated from each plant at the industrial complex owned by IEAT is to be incinerated in fluidized bed incinerator, and the process steam is to be generated by recovering **waste** heat by **waste** heat recovery boiler and to be supplied to plants within the complex. In this fiscal year, the first year of the project, the attachment to the agreement was prepared in terms of the allotment of the project work between Japan and Thailand, various kinds of gist, schedules, etc. and signed. After that, the following were conducted at the Japan side according to the attachment to the agreement: determination of the basic specifications for facilities, basic design, detailed design, manufacture of a part of the equipment, etc. Separate Volume 5 included the drawing of the basic design, drawing of building/design, drawing of manufacturing equipment, etc. (NEDO)

Descriptors: THAILAND; INDUSTRIAL **WASTES**; **WASTE** PRODUCT UTILIZATION; FUEL SUBSTITUTION; PETROLEUM; FOSSIL FUELS; FLUIDIZED-BED COMBUSTORS; INCINERATORS; **WASTE** HEAT UTILIZATION; **WASTE** HEAT BOILERS; ENGINEERING DRAWINGS; DESIGN

24/7,DE/91 (Item 3 from file: 103)
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04897625 NEDO

Title: FY 1999 report on the results of the contract project 'The model project for **facilities** for effective utilization of **industrial waste** at the **industrial complex** in Thailand.' Separate Volume 4 - FY 1999 project; 1999 nendo seika hokokusho. Tai ni okeru kogyo danchi sangyo haikibutsu yuko riyo setsubi moderu jigyo - 4

Author(s): NONE

Corporate Source: New Energy and Industrial Technology Development Organization, Tokyo (Japan)

Source: PBD: Mar 2001

Publication Date: 20010301

Availability Date: 20030217

Report Number(s): JP-NEDO--010019031

OSTI Number(s): DE20281007

Contract Number (Non-DOE): TRN JN0240261

Language: Japanese

Medium/Dimensions: 593 pages

Availability: Available to ETDE participating countries only(see www.etde.org); commercial reproduction prohibited; OSTI as DE20281007

Abstract: For the purpose of reducing the consumption of fossil fuel by **recycling industrial waste** for effective use as petroleum substituting energy in Thailand where the amount of industrial **waste** is expected to increase, a model project on facilities for effective use of industrial **waste** at the industrial complex was carried out, and the FY 1999 results were reported. **Concretely**, the industrial **waste** generated from each plant at the industrial complex owned by IEAT is to be incinerated in fluidized bed incinerator, and the process steam is to be generated by recovering **waste** heat by **waste** heat recovery boiler and to be supplied to plants within the complex. In this fiscal year, the first year of the project, the attachment to the agreement was prepared in terms of the allotment of the project work between Japan and Thailand, various kinds of gist, schedules, etc. and signed. After that, the following were conducted at the Japan side according to the attachment to the agreement: determination of the basic specifications for facilities, basic design, detailed design, manufacture of a part of the equipment, etc. Separate Volume 4 included the results of the inspection of the

tank, pump, blower, etc. (NEDO)

Descriptors: THAILAND; INDUSTRIAL **WASTES**; **WASTE** PRODUCT UTILIZATION; FUEL SUBSTITUTION; FOSSIL FUELS; ENERGY CONSERVATION; FLUIDIZED-BED COMBUSTORS; INCINERATORS; **WASTE** HEAT UTILIZATION; STEAM; INTERNATIONAL COOPERATION; TANKS; PUMPS; BLOWERS

24/7,DE/98 (Item 10 from file: 103)
DIALOG(R)File 103:Energy SciTec
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04126035 NEDO-96-920550; EDB-97-034739

Title: **Recycling system** and ecological **manufacturing** for **waste industrial products**

Original Title: Haikogyo seihin **recycle** to eko manufacturing
Author(s): Hasegawa, T.; Takamura, Y.; Hayashi, M.; Koseki, Y. (Hitachi, Ltd., Tokyo (Japan))

Source: Hitachi Hyoron v 78:7. Coden: HIHYA4 ISSN: 0367-5874

Publication Date: 1 Jul 1996

p 13-18

Language: Japanese

Abstract: Described in this article are the recent trend in the **recycling** of industrial products for example electric home appliances and the efforts of Hitachi, Ltd. for its pilot plant for **recycling** waste electric home appliances and ecology-oriented manufacturing. As matters now stand, 34% of large electric home appliances is treated at large-scale refuse disposal facilities operated by autonomous bodies and the remaining 66% by private-sector refuse disposal businesses. Some part of iron is recovered for reuse but this is a low-profit process, and the remaining part of the iron is ultimately subjected to incineration or burial. In the **waste** electric home appliances **recycling** pilot plant that came into operation in fiscal 1995, technologies are applied relating to very low-temperature crushing, chlorofluorocarbon recovery and decomposition, low-temperature crushing and weight-based screening of plastics, for the recovery of reusable materials. At this pilot plant, the rate of **waste** to be ultimately disposed of as filling **dust** occupies only 10% or lower. To properly meet an increase in the quantity of **waste** of office-use appliances in the future, development is under way of such element technologies as those involving product recognition, separation, and decomposition, and printed board decomposition and safening. 4 refs., 8 figs., 1 tab.

Major Descriptors: INDUSTRIAL **WASTES** -- ELECTRIC APPLIANCES;

*INDUSTRIAL **WASTES** -- PILOT PLANTS; *INDUSTRIAL **WASTES** -- **RECYCLING**; *MATERIALS RECOVERY -- CHLOROFLUOROCARBONS; *MATERIALS RECOVERY -- CRUSHING

Descriptors: INCINERATORS; SANITARY LANDFILLS

Broader Terms: APPLIANCES; COMMUNITION; EQUIPMENT; FUNCTIONAL MODELS;

MANAGEMENT; ORGANIC CHLORINE COMPOUNDS; ORGANIC COMPOUNDS; ORGANIC
FLUORINE COMPOUNDS; ORGANIC HALOGEN COMPOUNDS; PROCESSING; **WASTE**
DISPOSAL; **WASTE** MANAGEMENT; **WASTE** PROCESSING; **WASTES**

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